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SENSITIVE**

**MIL-STD-2045-14502-2  
July 1994**

**MILITARY STANDARD**

**INFORMATION TECHNOLOGY**

**DOD STANDARDIZED TRANSPORT PROFILE**

**INTERNET TRANSPORT PROFILE**

**FOR DOD COMMUNICATIONS**

**Part 2: Point-to-Point Links**



AMSC N/A

AREA DCPS

# MIL-STD 2045-14502-2: July 94

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## Foreword

This military standard is approved for use by all Departments and Agencies of the Department of Defense (DOD).

Beneficial comments (recommendations, additions, deletions) and any pertinent data that may be of use in improving this MIL-STD should be addressed to the:

Joint Interoperability and Engineering Organization (JIEO)  
ATTN: TBBD  
Fort Monmouth, New Jersey 07703-5613

by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this MIL-STD or by memorandum.

This DOD Standardized Profile (DSP) is a functional DOD Data Communications Protocol Standard (DCPS) produced by the DCPS Technical Management Panel (DTMP). The MIL-STD-2045 document series was established within the DCPS Standardization Area to allow for the enhancement of commercial standards or the development of standards that are unique to DOD.

The MIL-STD-2045-10000 series, MIL-STD-2045-10000 to MIL-STD-2045-19999 inclusive, will be used to describe how DOD will implement commercial, international, national, federal, or military standards within the functional profile concept to provide required network services. The Government Open Systems Interconnection Profile (GOSIP) will serve as the base for developing the 10000 series with DOD enhancements, unique military standards, and interim standards being used only when necessary.

The MIL-STD-2045-20000 series, MIL-STD-2045-20000 to MIL-STD-2045-29999 inclusive, will be used to describe DOD enhancements and extensions to existing commercial, international, national, or federal standards.

The MIL-STD-2045-30000 series, MIL-STD-2045-30000 to MIL-STD-2045-39999 inclusive, will be used to describe protocols and services unique to DOD that will not be supported by commercial, international, national, or federal standards.

The MIL-STD-2045-40000 series, MIL-STD-2045-40000 to MIL-STD-2045-49999 inclusive, will be used to document interim standards. Interim standards document protocols and services needed by DOD until these protocols and services are described in either GOSIP or in a MIL-STD-2045-20000 or -30000 series standard.

The MIL-STD-2045-50000 series, MIL-STD-2045-50000 to MIL-STD-2045-59999 inclusive, will be used to describe how DOD will implement commercial, international, national, federal, or military standards within the functional profile concept to provide required network services. The Government Open Systems Interconnection Profiles (GOSIP) will serve as the base for developing the 50000 series with DOD enhancements, unique military standards, and interim standards being used only when necessary. The difference between MIL-STD-2045-10000 series and the MIL-STD-2045-50000 series is that the 50000 series are interim profiles

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Specific details and instructions for establishing a MIL-STD-2045 document, as well as profile development guidelines, are documented in MIL-HDBK-829. DTMP Working Groups shall be responsible for DSP development and informal Service or Agency coordination; the DTMP Plenary shall be responsible for final review and approval.

This document is part of a set of interim DOD data communications protocol profiles based on the Internet protocol suite, and is intended to support the interoperability of DOD communication networks, including connectivity with the Defense Data Network (DDN).

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The options and parameters specified in this DSP take precedence over MIL-STD 1777, Internet Protocol and MIL-STD 1778, Transmission Control Protocol.

This part of MIL-STD-2045-14502 contains one normative and one informative annex:

Annex A (normative)	DSPICS REQUIREMENTS LIST (DPRL)
Annex B (informative)	CONCLUDING MATERIAL

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## Introduction

This MIL-STD is part of a set of interim Command and Control (C<sup>2</sup>) common data communication profiles. It will cease to exist upon the transition of the various military service and agency (S/A) networks to GOSIP. The purpose is to record what presently exists in, and what is needed to achieve the interoperability of the various S/A data communication networks deployed to support a Joint Task Force (JTF).

This DSP is defined within the context of functional standardization, in accordance with the principles specified by MIL-HDBK-829, volume 2, "Guidelines For Data Communications Protocol Standards (DCPS) DOD Standardized Profiles (DSPs)." The context of functional standardization is one part of the overall field of Information Technology (IT) standardization activities covering base standards, profiles and registration mechanisms. A profile defines a combination of base standards that collectively perform a specific well-defined Information Technology function. Profiles standardize the selection of options and other variations in the base standards to promote system interoperability.

The base standards of this DSP include: Request For Comments (RFCs) designated as Official Internet Architecture Board (IAB) standards, other RFCs, and Open Systems Interconnection (OSI) Layer Standards from the Open Systems Interconnection (OSI) Reference Model.

This document is intended to be part of a complete transport profile based on TCP/IP. It specifies an internet connection-mode transport service over an internet connectionless mode network service operating over several types of subnetworks. This is a multipart transport profile, of which this document is Part 2. Part 2 specifies the subnetwork-dependent requirements for point-to-point links.

# Information Technology - DOD Standardized Profile (DSP) - Internet Transport Profiles - Part 2: Point-to-Point Links

## 1 Scope

### 1.1 General

This DOD Standardized Profile (DSP) MIL-STD 2045-14502 applies to end systems operating in the Defense Data Network (DDN). It specifies a combination of layer protocols that collectively provide the Transmission Control Protocol (TCP) over the Internet Protocol (IP) operating over DDN subnetworks. This part of the DSP addresses Layer 1 and 2 requirements for point-to-point links using the EIA 232D/EIA 530 physical interface.

A conforming implementation of this profile shall be unconditionally compliant and therefore, shall satisfy all the "MUST" and all the "SHOULD" requirements of the reference base standards and shall not implement any capability that has been identified by the base standards as "SHOULD NOT".

### 1.2 Position Within the Taxonomy

This profile contains requirements for both connection-oriented and a connectionless transport service. It also contains requirements for a connectionless network service.

### 1.3 Scenario

This profile specifies the provision for connectionless or connection-oriented transport service between an end system connected to a subnetwork and another compatible end system through the IP connectionless network service. The compatible end system may use mutually agreed upon access methods contained within this DSP, or may conform to a mutually agreed upon alternative access methods. An end system is compatible only if the suboptions (e.g., TCP) are compatible. This profile contains the subnetwork dependent requirements for point-to-point links.

The layer standards that make up this profile are shown in Figure 1.

TRANSPORT LAYER	IAB STD 7 (TCP) IAB STD 6 (UDP)	Internet Transport Group Profile MIL-STD 2045-14502, Part 1
NETWORK LAYER	IAB STD 5 (IP)	
		Subnetwork-Independent Part (non-extant)
DATA LINK LAYER	ISO 7776	Point-to-Point Links MIL-STD 2045-14502, Part 2
PHYSICAL LAYER	EIA 232-D / EIA 530	

Figure 1. Transport Profile Scenario

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### 2 References

#### 2.1 Government Documents

##### 2.1.1 Specifications, standards, and handbooks.

The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

MIL-HDBK 829:	July 1994	<i>Guidelines for DOD Standardized Profiles.</i>
MIL-STD-2045-14502-1,	July 1994	<i>Transport and Internet Services</i>
MIL-STD-2045-14502-3,	July 1994	<i>Wide Area Network Access</i>
MIL-STD-2045-14502-4,	July 1994	<i>Local Area Network (LAN) Media Independent Requirements</i>
MIL-STD-2045 14502-5	July 1994	<i>Carrier-Sense Multiple Access With Collision Detection (CSMA/CD) Local Area Network (LAN) Media Dependent Requirements</i>
MIL-STD-2045-14502-6,	July 1994	<i>Combat Net Radio (CNR)</i>

DOD activities may obtain copies of DOD directives through their own publication channels or from the DOD Single Stock Point, Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094. Other federal agencies and the public may purchase copies from the U.S. Department of Commerce, National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

Copies of Federal Information Processing Standards (FIPS) are available to Department of Defense activities from the Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120-5099. Others must request copies of FIPS from the National Technical Information Services, 5285 Port Royal, Springfield, VA 22161-2171.

##### 2.1.2 Other Government documents, drawings and publications.

NONE

#### 2.2 Non-Government publications.

The following documents form a part of this document to the extent specified herein. Unless otherwise specified the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation.

##### 2.2.1 Profiles

NONE

##### 2.2.2 Base Standards

ISO 7776:1993	<i>Information Technology - Data Communication - High Level Data Link Control Procedures - Description of the X.25 LAPB-compatible DTE Data Link Procedure.</i>
EIA 232D	<i>EIA 232-D, Interface Between Data Terminal Equipment and Data Circuit-Termination Equipment Employing Serial Binary Data Interchange.</i>
EIA 530	<i>EIA 530, High Speed 25-Position Interface for Data Terminal Equipment and Data Circuit-Termination Equipment Including Alternative 26-Position Connector.</i>

##### 2.2.3 Other Non Government documents, drawings, and publications

The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the

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issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation

ISO 3309:1991	<i>Information Technology - Telecommunications and Information Exchange Between Systems - High Level Data Link Control (HDLC) Procedure - Frame Structure.</i>
ISO 4335:1991	<i>Information Technology - Telecommunications and Information Exchange between Systems - High-Level Data Link Control (HDLC) Procedures - Elements of Procedures.</i>
CCITT V.24	<i>List of definitions for interchange circuits between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE).</i>
CCITT V.28	<i>Electrical characteristics for unbalanced double-current interchange circuits.</i>
EIA 422-A	<i>Electrical Characteristics of Balanced Voltage Digital Interchange Circuits.</i>
EIA 423-A	<i>Electrical Characteristics of Unbalanced Voltage Digital Interchange Circuits.</i>
ISO 2110	<i>Information Technology - Data Communication - 25-Pole DTE/DCE Interface Connector and Contact Number Assignments.</i>

### 2.3 Order of precedence

In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

### 3 Definitions

For the purposes of this DSP, the following terms have the meanings stated in DOD Standardized Profile Guidelines (ref. 2.4 (a)):

- (a) Base Standard.
- (b) DOD Protocol Implementation Conformance Statement (DPICS).
- (c) DOD Standardized Profile (DSP).
- (d) DOD Standardized Profile Implementation Conformance Statement (DSPICS).
- (e) DSPICS Requirements List (DPRL).

The following terms are additionally defined for the purposes of this DSP:

**Internet Architecture Board (IAB) Standard (STD):** The IAB has established this as an official standard protocol for the Internet. These protocols are assigned STD numbers.

**Request For Comments (RFCs):** RFCs are the working notes of the "Network Working Group," that is the Internet research and development community.

Note: All Internet standards are published as RFCs, but not all RFCs specify standards.

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## 4 Symbols and Abbreviations

The symbols and abbreviations used in this DSP are defined in MIL-HDBK 829, in the referenced base standards, or in the standards referenced by the base standards. The following is a partial list:

IAB	Internet Architecture Board
RFC	Request For Comments
STD	Standard
TCP	Transmission Control Protocol
UDP	User Datagram Protocol
IP	Internet Protocol

## 5 Requirements

### 5.1 General Requirements

A conforming implementation of MIL-STD 2045-14502 shall be unconditionally compliant and therefore shall satisfy all the "must" and all the "should" requirements of the reference base standards and shall not implement any capability that has been identified by the base standards as "should not". The following requirements shall be implemented.

- (a) All requirements in the remainder of this section 5.
- (b) All mandatory requirements of the base standards referenced by this DSP.
- (c) All the constraints specified in Annex A (normative), DPRL.

### 5.2 Data Link Requirements

A conforming implementation of MIL-STD 2045-14502, Part 2 shall satisfy the conformance requirements of ISO/IEC DIS 7776.

#### 5.2.1 Static Conformance Requirements

This section contains a defined set of services and performing functions of the High Level Data Link Control (HDLC)-Link Access Procedures Balanced (LAPB), ISO/IEC DIS 7776.

##### 5.2.1.1 Major Capabilities

The implementation shall support the single link procedure. Multi-link procedure shall be excluded.

The LAPB protocol shall be used for DTE/DTE operation. Address assignment information shall be defined as follow:

- (a) DTE = Address A (=11000000);
- (b) DCE = Address B (=10000000);
- (c) On a DTE/DTE interface, one of the DTEs, by a prior agreement, shall use the DCE address.

##### 5.2.1.2 Basic Operations

The sequence number shall be modulo-8 for a link established using a SABM command, and modulo-128 for a link established with a SABME command.

##### 5.2.1.3 Information Transfer

Checkpoint recovery shall be initiated by I frames transmitted with the Poll (P) bit set to 1.

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A station shall support reception and correctly interpret REJ frames.

### **5.2.1.4 Framing**

A station shall send only octet aligned frames. Receipt of non-octet aligned frames shall be considered invalid and discarded.

The flag sequence shall consist of the binary sequence 01111110. A flag that terminates one frame may be used to signal the start of next frame.

For synchronous transmission, a frame shall be aborted by transmitting at least 7 contiguous 1 bits.

### **5.2.1.5 Timers**

T1 timer recovery shall be supported upon transmission of REJ frames.

## **5.2.2 Dynamic Conformance Requirements**

A station, upon receipt of any out of sequence I frames, shall initiate REJ recovery.

## **5.3 Physical Layer Requirements**

A conforming implementation of MIL-STD 2045-14502, Part 2 shall satisfy the requirements of EIA 232-D or EIA 530-A. EIA 232-D is used for a data transmission rate of 0-20 Kbps for distances under 50 feet. EIA 530 is used for data transmission rates above 20 Kbps. Other non-standard physical interfaces are allowable as long they are functionally equivalent.

### **5.3.1 Static Conformance Requirements**

There are no additional static conformance requirements for EIA 232-D and EIA 530.

### **5.3.2 Dynamic Conformance Requirements**

There are no additional dynamic conformance requirements for EIA 232-D and EIA 530.

## ANNEX A (normative)

### DSPICS REQUIREMENTS LIST (DPRL)

#### A.1 Introduction

This document provides the DSPICS Requirements List (DPRL) for implementations of the DOD Standardized Profile (DSP) 2045-14502. The DSPICS for an implementation is generated by completing the DPRL in accordance with the instructions given below.

An implementation shall satisfy the mandatory conformance requirements of the base standards referenced in this profile.

A completed DPRL is called the DSPICS for the implementation in question. The DSPICS is a statement of which capabilities and options of the protocol have been implemented. The following can use the DSPICS:

- (a) the protocol implementor, as a check-list to reduce the risk of failure to conform to the standard through oversight.
- (b) the supplier and acquirer - or potential acquirer - of the implementation, as a detailed indication of the capabilities of the implementation, stated relative to the common basis for understanding provided by the standard DSPICS proforma.
- (c) the user - or potential user - of the implementation, as a basis for initially checking the possibility of interworking with another implementation (note that, while interworking can never be guaranteed, failure to internetwork can often be predicted from incompatible DSPICSs).
- (d) by a protocol tester, as the basis for selecting appropriate tests against which to assess the claim for conformance of the implementation.

#### A.1.1 Notation

The following notations and symbols from MIL-HDBK 829, which references ISO/IEC TR 10000-1 and -2, are used in the DPRL to indicate the status of features:

##### Status Symbols

m	- mandatory.
m.<n>	- support of every item of the group labeled by the same numeral <n> required, but only one is active at a time.
o	- optional.
o.<n>	- optional, but support of at least one of the group of options labeled by the same numeral <n> is required.
c	- conditional.
-	- non-applicable (i.e. logically impossible in the scope of the profile).
x	- excluded or prohibited.
i	- out of scope of profile (left as an implementation choice).

In addition, the symbol "€" is used to indicate an option whose status is not constrained by the profile (status in the base standard). The o.<n> notation is used to show a set of selectable options (i.e., one or more of the set must be implemented) with the same identifier <n>.

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Two character combinations may be used for dynamic conformance requirements. In this case, the first character refers to the static (implementation) status, and the second refers to the dynamic (use); thus 'mo' means "mandatory to be implemented, optional to be used."

### Notations for Conditional Status

The following predicate notation is used:

<predicate>:: This notation introduces a group of items, all of which are conditional on <predicate>.

<predicate>: This notation introduces a single item which is conditional on <predicate>.

In each case, the predicate may identify a profile feature, or a boolean combination of predicates. ("^" is the symbol for logical negation).

<index>: This predicate symbol means that the status following it applies only when the DPICS states that the features identified by the index is supported. In the simplest case, <index> is the identifying tag of a single DPICS items. <index> also may be a Boolean expression composed of several indices.

<index>:: When this group predicate is true, the associated clause should be completed.

### Notations used in the Protocol Feature Column

<r> Symbol used to denote the receiving system.

<t> Symbol used to denote the transmitting system.

### Support Column Symbols

The support of every item as claimed by the implementor is stated by circling the appropriate answer (either Yes, No or N/A) in the support column:

Yes Supported by the implementation.

No Not supported by the implementation.

N/A Not applicable.

Base standard requirements are shown using the equivalent notations in upper case (e.g., M, O, X).

## A.1.2 Footnotes

Footnotes to the proforma are indicated by superscript numerals. The footnote appears on the page of the first occurrence of the numeral. Subsequent occurrences of a numeral refer to the footnote of the first occurrence.

## A.1.3 Instructions for Completing the DPRL

A DSP implementor shows the extent of compliance to a DSP by completing the DPRL; that is, compliance to all mandatory requirements and the options that are not supported are shown. The resulting completed DPRL is called a DSPICS. Where this profile refines the features of the base standards, the requirements expressed in this DPRL shall be applied (as indicated in DPRL items with no "Profile Support" column) to constrain the allowable responses in the base standard DPICS proforma. When this profile makes additional requirements, the "Profile Support" column for such DPRLs shall be completed. In this column, each response either shall be selected from the indicated set of responses, or comprise one or more parameter values as requested. For an inapplicable conditional requirement, a Not Applicable (NA) check-box is provided. If a mandatory requirement is not satisfied, exception information must be supplied by entering a reference Xi, where i is a unique identifier, to an accompanying rationale for the noncompliance. When the profile requirement is expressed as a two-character combination (as defined in A.1.1 above), then the response shall address each element of the requirement; e.g., for the requirement "mo," the possible compliant responses are "yy" or "yn."

## A.2 Standards Referenced

This profile specifies the provision of TCP/UDP service in an end system from which a standardized IP network service operating over point-to-point links is available (or can be made available). It uses the following standards:

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ISO 7776  
EIA 232-D/EIA 530

Data Link Layer Protocol  
Physical Layer Specification

### A.3 DSPICS Requirements List

#### A.3.1 General Information

##### A.3.1.1 Implementation Identification

Supplier	
Contact point for queries about the profile	
Implementation Name(s) and Version(s)	
Date of statement	
Other Information: Machine Name, Operating Systems, System Name	

##### A.3.1.2 Protocols

Item	Protocol Feature	Base Standard		Profile		Supported
		Reference	Status	Clause	Status	
LAPB	Link Access Procedures Balanced	ISO 7776		2.1	m	Yes
RS1	EIA 232-D	EIA 232-D		2.1	o.1	Yes No
RS2	EIA 530	EIA 530		2.1	o.1	Yes No
RSX	Functionally Similar Physical Interface			5.3	o.1	Yes No

### A.3.2 Data Link Layer

The Data Link layer DPRL must be used with the PICS proforma for the base standard, ISO/IEC DIS 7776:1993, since only those features refined in the profile are included.

#### A.3.2.1 Major Capabilities (A.5)

Item	Protocol Feature	Base Standard		Profile		Supported
		Reference	Status	Clause	Status	
Ls	Single Link Procedure	1	M	5.2.1.1	m	Yes
Lm	Multi-link procedure	6	O	5.2.1.1	x	No
	DTE/DCE or DTE/DTE Operation:					
Lt	DTE/DTE Operation	1	O	5.2.1.1	m	Yes
	If DTE/DCE operation is supported:					
Lta	Assignment of 'A' and 'B' Addresses as for a DCE	1	O	5.2.1.1.	m	Yes

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**A.3.2.2 Single link procedure: basic/extended operation and transmission environments (A.6.1)**

Item	Protocol Feature	Base Standard		Profile		Supported
		Reference	Status	Clause	Status	
	Frame Format:					
M8	Basic (Modulo 8)	3	O.1	5.2.1.2	m	Yes
M128	Extended (Modulo 128)	3	O.1		m	Yes
Tsy	Synchronous transmission	3.5.1, 3.8.1, 3.9.1, 3.10.1, 3.11.1	O.2	5.2.1.2	o	Yes No

**A.3.2.3 Single Link procedure: information transfer (A.6.3)**

Item	Protocol Feature	Base Standard		Profile		Supported
		Reference	Status	Clause	Status	
	Support of Information Transfer					
	Does the DTE support checkpoint recovery, initiated by transmitting?:	4.4.2.1				
ITCi	I frames with P=1.		O.5	5.2.1.3	m	Yes
ITCs	Supervisory frames with P=1.		O.5		o	Yes No
ITRJ	I frame retransmission on receipt of REJ frames	4.4.2.2, 5.3.6	M	5.2.1.3	m	Yes
IRRJ	Initiation of REJ recovery on out-of-sequence I frames	4.4.2.2, 5.4.4	M	5.2.2	mo	Yes No

**A.3.2.4 Single link procedures: frame formats (A.6.4)**

Item	Protocol Feature	Base Standard		Profile		Supported
		Reference	Status	Clause	Status	
F1a	Is the DTE capable of sending non-octet aligned frames?	3.4	O	5.2.1.4.1	x	No
	Does receipt of non-octet aligned frames cause:					
F1b	Discard of frame as invalid?	3.8,5.4.3	O.2	5.2.1.4.1	m	Yes
F1c	Acceptance of frame as valid?	3.8, 5.4.3	O.2		x	No
F4	Does the DTE generate a single flag to be used as both the closing flag for one frame and an the opening flag for the next?	3.1	O	5.2.1.4.2	m	Yes
FAa	Is frame abortion supported for transmitted frames?	3.9	O	5.2.1.4.3	m	Yes

**A.3.2.5 Single link procedure: timers (A.6.5)**

Item	Protocol Feature	Base Standard		Profile		Supported
		Reference	Status	Clause	Status	
	Does DTE support Timer T1 recovery for the following frames sent?:					
T1e	REJ	4.4.2.2	O	5.2.1.5	m	Yes

**A.3.3 DTE/DCE Physical Interface**

This section references EIA 232D, EIA 530 and other related standards.

**A.3.3.1 General**

Item	Protocol Feature	Base Standard		Profile		Supported
		Reference	Status	Clause	Status	
	Interface Type:					
I1	- EIA 232D		O.1	5.3	o.1	Yes No
I2	- EIA 530		O.1	5.3	o.1	Yes No
I3	- Other Functionally Similar Physical Interface		O.1	5.3	o.1	Yes No
	Subnetwork access type:					
SN1 SN2	- Leased/Dedicated line - Switched network service	1.6	O		m	Yes
	Physical Interface:					
PI1 PI2	- V-series - X.21 bis leased circuit service	V.32, V.36 X.21 bis § 5.2	SN1:M SN2:M		SN1:m SN2:m	Yes N/A Yes N/A
SR0 SR1 SR2	Data signalling rates: - From 0 to 20 Kbps - From 20 Kbps to 2 Mbps - From 2 Mbps to 10 Mbps	1.3	I1:M I2:O.2 I2:O.2		I1:m I2:o.2 I2:o.2	Yes N/A Yes No Yes No
Sy NSy	Type of data communication: - Synchronous - Non-synchronous	1.5	O.3 O.3		PI1:m PI2:m	Yes Yes
	Electrical Characteristics:					
V28 V10 V11	- V.28 - EIA 423A - EIA 422A	V.28 EIA 423A EIA 422A	SR0:O.4 SR1:O.4 SR2:O.4		SR0:o.3 SR1:o.3 SR2:o.3	Yes No Yes No Yes No
DB25	Connector - DB25	ISO 2110	M		m	Yes

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A.3.3.2 EIA 232D Interchange Circuits<sup>1</sup> (I1::)

Item	Protocol Feature	Base Standard		Profile		Supported
		Reference	Status	Clause	Status	
AA	pin 1 - Protective Ground (101)	3.3, 2.2	O		m	Yes
BA	pin 2 - Transmitted Data (103)	3.3, 4.4	M		m	Yes
BB	pin 3 - Received Data (104)	3.3, 4.4	M		m	Yes
CA	pin 4 - Request to Send (105)	3.3, 4.4	M		m	Yes
CB	pin 5 - Clear to Send (106)	3.3, 4.4	M		m	Yes
CC	pin 6 - Data Set Ready (107)	3.3, 4.4	M		m	Yes
AB	pin 7 - Signal Ground/Common Return (102)	3.3, 4.4	M		m	Yes
CF	pin 8 - Received Line Signal Detector (109)	3.3, 4.4	M		m	Yes
SCF	pin 12 - Secondary Received Line Signal Detector(122)	3.3, 4.4	O		o	Yes No
SCB	pin 13 - Secondary Clear to Send (121)	3.3, 4.4	O		o	Yes No
SBA	pin 14 - Secondary Transmitted Data (118)	3.3, 4.4	O		o	Yes No
DB	pin 15 - Transmission Signal Element Timing, DCE (114)	3.3, 4.4	Sy:M else:O		m	Yes
SBB	pin 16 - Secondary Received Data (119)	3.3, 4.4	O		o	Yes No
DD	pin 17 - Receiver Signal Element Timing, DCE source (115)	3.3, 4.4	Sy:M		Sy:m else:o	Yes No
SCA	pin 19 - Secondary Request to Send (120)	3.3, 4.4	O		o	Yes No
CD	pin 20 - Data Terminal Ready (108)	3.3, 4.4	SN2:M else:O		SN2:m else:o	Yes
CG	pin 21 - Signal Quality Detector (110)	3.3, 4.4	O		o	Yes No
CE	pin 22 - Ring Indicator (125)	3.3, 4.4	SN2:M else:O		SN2:m else:o	Yes No
CH /CI <sup>2</sup>	pin 23 - Data Signal Rate Selector (111)	3.3, 4.4	O		o	Yes No
DA	pin 24 - Transmit Signal Element Timing, DTE source (113)	3.3, 4.4	Sy:M		Sy:m else:o	Yes No
RD	pin 9,10 - Reserved for Data Set Testing	3.3	O		o	Yes No
RL	pin 21 - Remote Loopback (140)	3.3, 4.4	O		o	Yes No
LL	pin 18 - Local Loopback (141)	3.3	O		o	Yes No
TM	pin 25 - Test Mode (142)	3.3	O		o	Yes No
UN	pin 11 - Unassigned	3.3	O		o	Yes No

<sup>1</sup>The CCITT V.24 equivalent assignment numbers are given in parentheses.

<sup>2</sup>If SCF is not used, CI is assigned to pin 12.

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A.3.3.3 EIA 530 Interchange Circuits<sup>3</sup> (I2::)

Item	Protocol Feature	Base Standard		Profile		Supported
		Reference	Status	Clause	Status	
	pin 1 - Shield	2.3, 3.4	M		m	Yes
BA	pin 2 - Transmitted Data A (103) pin 14 - Transmitted Data B	3.4, 4.3.2	M		m	Yes
BB	pin 3 - Received Data A (104) pin 16 - Received Data B	3.4, 4.3.3	M		m	Yes
CA	pin 4 - Request to Send A (105) pin 19 - Request to Send B	3.4, 4.3.4	M		m	Yes
CB	pin 5 - Clear to Send A (106) pin 13 - Clear to Send B	3.4, 4.3.5	M		m	Yes
CC	pin 6 - Data Set Ready DCE A (107) pin 22 - Data Set Ready DCE B	3.4, 4.3.6	M		m	Yes
CD	pin 20 - Data set Ready DTE A (108) pin 23 - Data set Ready DTE B	3.4, 4.3.7	M		m	Yes
AB	pin 7 - Signal Ground/Common Return (102)	3.4, 4.3.1	M		m	Yes
CF	pin 8 - Received Line Signal Detector A(109) pin 10 - Received Line Signal Detector B	3.4, 4.3.9	M		m	Yes
DA	pin 24 - Transmit Signal Element Timing A,DTE (113) pin 11 - Transmit Signal Element Timing B,DTE	3.4, 4.3.14	Sy:M else:O		Sy:m else:o	Yes
DB	pin 15 - Transmit Signal Element Timing A,DCE (114) pin 12 - Transmit Signal Element Timing B,DCE	3.4, 4.3.15	Sy:M else:O		Sy:m else:o	Yes
DD	pin 17 - Receiver Signal Element Timing A, DCE source (115) pin 9 - Receiver Signal Element Timing B, DCE source	3.4, 4.3.16	Sy:M else:O		Sy:m else:o	Yes
RL	pin 21 - Remote Loopback (140)	3.4, 4.3.12	O		o	Yes No
LL	pin 18 - Local Loopback (141)	3.4, 4.3.11	O		o	Yes No
TM	pin 25 - Test Mode (142)	3.4, 4.3.13	O		o	Yes No

<sup>3</sup>The CCITT V.24 equivalent assignment numbers are given in parentheses.

**ANNEX B (informative)**

**CONCLUDING MATERIAL**

**B.1 Deviations from the Base Standards/Referenced Profiles**

This MIL-STD documents the data contained in the IAB standards 3, 5, 6, and 7 in the ISO/IEC TR 10000, "Framework and Taxonomy of International Standardized Profiles" and MIL-HDBK-829 format. This DSP does not deviate from the protocol as written in the RFC base standards.

The classification of the requirements in RFCs have been changed in the DSPICS to the following:

<u>RFC</u>	<u>MIL-STD</u>
MUST	Mandatory
SHOULD	Mandatory
MAY	Optional
SHOULD NOT	Prohibited
MUST NOT	Prohibited

**B.2 Subject Term (Keyword) Listing**

Data Communications Equipment  
Data Link  
Data Terminal Equipment  
DCE  
DTE  
Internet Activities Board  
IP  
Internet Protocol  
Network  
Physical Layer  
RFC  
Subnetwork  
Transmission Control Protocol  
TCP

**B.3 Preparing Activity:**

Defense Information Systems Agency (DISA) - DC  
Project: DCPS-0013

**B.4 Reviewing Activity:**

Army	SC, PT
Air Force	13, 17, 29, 33, 90
DLA	DH
DMA	MP
DIA	DI
DOT	OST
NSA	NS
OASD	IQ, DO, MA, IR
ODISC4 AC	
NAVY	EC, CH, ND, TD, OM
USMC	MC, CG

**B.5 Custodians:**

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DISA:	DC
Army:	SC
Air Force:	90
Navy:	OM
DIA:	DI
NSA:	NS
USMC:	MC
DLA:	DH
Other:	Joint Staff/Architecture & Integration USSPACECOM

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940729

3. DOCUMENT TITLE Information Technology - Defense Standardized Profiles - Internet Transport Profile for DOD Communications - Part 2: Point - to - Point Links

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

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